



Program Management Office
1000 Westinghouse Drive
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PWROG-18034-P and PWROG-18034-NP, Revision 0
Project Number 694
Docket Number 99902037

October 31, 2018

OG-18-226

Document Control Desk
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Subject: PWR Owners Group
Transmittal of PWROG-18034-P and PWROG-18034-NP, Revision 0,
"Updates to the Methodology in WCAP-15029-P-A, Rev. 1,
'Westinghouse Methodology for Evaluating the Acceptability of Baffle-
Former-Barrel Bolting Distributions Under Faulted Load
Conditions'" PA-MSC-1519

The purpose of this letter is to transmit Pressurized Water Reactor Owners Group (PWROG) Topical Report (TR), PWROG-18034-P and PWROG-18034-NP, Revision 0, "Updates to the Methodology in WCAP-15029-P-A, Rev. 1 and WCAP-15030-NP-A, Rev. 0, "Westinghouse Methodology for evaluating the Acceptability of Baffle-Former-Barrel Bolting Distributions Under Faulted Load Conditions"," in accordance with the Nuclear Regulatory Commission (NRC) TR program for review and acceptance for referencing in regulatory actions (Enclosures 1 and 2).

Topical Report Summary

WCAP-15029-P-A and WCAP-15030-NP-A contains a methodology for evaluating the impact on fuel assembly structural integrity associated with a reduced number of baffle and barrel bolts, less than 100%, during Faulted conditions when performing an acceptable bolting pattern analysis (ABPA). The modeling technique utilized in WCAP-15029-P-A was not available when the original design basis calculations were performed and often results in a higher number of required bolts. After the NRC Safety Evaluation (SE) for WCAP-15029-P-A was issued, tensile testing of baffle bolts was performed, which demonstrates that irradiated bolting has increased yield and ultimate strength and still retained substantial ductility. Based on these factors the following changes to the NRC approved methodology in WCAP-15029-P-A are being proposed:

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NRR

1. An option is provided to consider either a linear-elastic or an elastic-plastic material model in the finite element (FE) model of the baffle-former assembly as defined in Section 2.1.3.2.1 of WCAP-15029-P-A.
2. Additional acceptance criteria are added to the criteria contained in Section 4.3.1 of WCAP-15029-P-A for the evaluation of replacement bolts that utilize material properties as defined in Section III of the ASME Code and Code Case N-60.
3. Additional acceptance criteria are added to the criteria contained in Section 4.3.2 of WCAP-15029-P-A for the evaluation of irradiated bolts including: Option 1 to conservatively apply the acceptance criteria for unirradiated bolts, Option 2 to apply the acceptance criteria for high strength structural fasteners, and Option 3 to apply a modified version of the acceptance criteria for high strength fasteners to the elastic-plastic analysis that are not a function of the S_m material property.
4. The material properties to be applied to evaluate irradiated bolting are determined from a statistical analysis of tensile test data, based upon a test data set from irradiated materials and accounting for the associated test parameters.
5. Clarification is provided regarding the Normal / Upset condition bolts stress limits, which are only evaluated for those plants with reactor vessel internals that are designed to Section III of the ASME Code. However, demonstration of shakedown can be used in lieu of certain primary plus secondary linear-elastic stress limits, where shakedown is demonstrated when the deformation stabilizes and the subsequent structural response is elastic.
6. The NRC approved methodology is WCAP-15029-P-A is not impacted by these changes, and can still be applied to those plants where acceptable bolting patterns result from the WCAP-15029-P-A methodology.

Limits of Applicability

The updates to the NRC approved methodology in WCAP-15029-P-A that are contained in PWROG-18034 are applicable to Westinghouse NSSS plants for the evaluation of the number and distributions of baffle-former and barrel-former bolts, less than the original design of 100%.

Intended Application / Industry Implementation

After the NRC issues the Final Safety Evaluation, licensees will reference the methodology updates in PWROG-18034-P in their 10 CFR 50.59s associated with implementing an ABPA. Referencing PWROG-18034-P in plant 10 CFR 50.59s is the most efficient utilization of both Staff and NRC resources, instead of submitting individual License Amendment Requests to implement these methodology updates in ABPAs.

NRC Review Schedule

The PWROG requests that the NRC complete their review of the TR by November 2019.

This letter transmits two copies of PWROG-18034-P, Revision 0 (Enclosure 1) and one copy of PWROG-18034-NP, Revision 0 (Enclosure 2). PWROG-18034-P, Revision 0 (Enclosure 1) contains information proprietary to Westinghouse which is supported by an affidavit signed by Westinghouse, owner of the information. The affidavit, CAW-18-4830, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b) (4) of Section 2.390 of the Commission's regulations. The affidavit is included as Enclosure 3.

Accordingly, it is respectfully requested that this information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission's regulations.

Correspondence related to this transmittal should be addressed to:

Mr. W. Anthony Nowinowski, Program Manager
PWR Owners Group, Program Management Office
Westinghouse Electric Company
1000 Westinghouse Drive, Suite 386
Cranberry Township, Pennsylvania 16066

If you have any questions, please do not hesitate to contact me at (805) 545-4328 or Mr. W. Anthony Nowinowski, Program Manager of the PWR Owners Group, Program Management Office at (412) 374-6855.

Sincerely yours,



Ken Schrader, Chief Operating Officer and Chairman
PWR Owners Group

KS:WAN:am

Enclosures:

1. PWROG-18034-P Revision 0 "Updates to the Methodology in WCAP-15029-P-A, Rev. 1, "Westinghouse Methodology for Evaluating the Acceptability of Baffle-Former-Barrel Bolting Distributions Under Faulted Load Conditions"." (Proprietary, 2 copies)
2. PWROG-18034-NP Revision 0 "Updates to the Methodology in WCAP-15030-NP-A, Rev. 0, "Westinghouse Methodology for Evaluating the Acceptability of Baffle-Former-Barrel Bolting Distributions Under Faulted Load Conditions"." (Non-Proprietary, 1 copy)
3. Application of Withholding, CAW-18-4830

cc: PWROG Management Committee
PWROG Materials Committee
PWROG Steering Committee
PWROG Licensing Committee
PWROG PMO
J. Drake, US NRC
J. Andrachek, Westinghouse
M. Fici, Westinghouse
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CAW-18-4830

October 30, 2018

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: PWROG-18034-P Revision 0 "Updates to the Methodology in WCAP-15029-P-A, Rev. 1, "Westinghouse Methodology for Evaluating the Acceptability of Baffle-Former-Barrel Bolting Distributions Under Faulted Load Conditions"." (Proprietary)

The Application for Withholding Proprietary Information from Public Disclosure is submitted by Westinghouse Electric Company LLC ("Westinghouse"), pursuant to the provisions of paragraph (b)(1) of Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations. It contains commercial strategic information proprietary to Westinghouse and customarily held in confidence.

The proprietary information for which withholding is being requested in the above subject report is further identified in Affidavit CAW-18-4830 signed by the owner of the proprietary information, Westinghouse. The Affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by the Pressurizer Water Reactor Owners Group (PWROG).

Correspondence with respect to the proprietary aspects of the Application for Withholding or the Westinghouse Affidavit should reference CAW-18-4830 and should be addressed to Camille T. Zozula, Manager, Facilities and Infrastructure Licensing, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 2 Suite 259, Cranberry Township, Pennsylvania 16066.

Paul A. Russ, Director
Licensing and Regulatory Affairs

Enclosures:

- 1) Affidavit CAW-18-4830
- 2) Proprietary Information Notice and Copyright Notice
- 3) PWROG-18034-P, Rev. 0 "Updates to the Methodology in WCAP-15029-P-A, Rev. 1, "Westinghouse Methodology for Evaluating the Acceptability of Baffle-Former-Barrel Bolting Distributions Under Faulted Load Conditions"."

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:


SS

COUNTY OF BUTLER:

I, Paul A. Russ, am authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC ("Westinghouse") and declare that the averments of fact set forth in this Affidavit are true and correct to the best of my knowledge, information, and belief.

Executed on:

10/30/18

A handwritten signature in dark ink, appearing to read "Paul A. Russ", written over a horizontal line.

Paul A. Russ, Director
Licensing and Regulatory Affairs

- (1) I am Director, Licensing and Regulatory Affairs, Westinghouse Electric Company LLC ("Westinghouse"), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Nuclear Regulatory Commission's ("Commission's") regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.
 - (ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Westinghouse policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

- (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

- (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage (e.g., by optimization or improved marketability).
 - (c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.
 - (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.
 - (e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.
 - (f) It contains patentable ideas, for which patent protection may be desirable.
- (iii) There are sound policy reasons behind the Westinghouse system which include the following:
- (a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.
 - (b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.
 - (c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

- (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.
 - (e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.
 - (f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iv) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, is to be received in confidence by the Commission.
- (v) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
- (vi) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in Enclosure 3 to CAW-18-4830, PWROG-18034-P Revision 0 "Updates to the Methodology in WCAP-15029-P-A, Rev. 1, "Westinghouse Methodology for Evaluating the Acceptability of Baffle-Former-Barrel Bolting Distributions Under Faulted Load Conditions", (Proprietary), for submittal to the Commission, being transmitted by OG-18-226 letter. The proprietary information as submitted by Westinghouse is that associated with updates to the NRC approved methodology in WCAP-15029-P-A as used to evaluate baffle-former and barrel-former bolting patterns for Faulted conditions and may be used only for that purpose.
- (a) This information is part of that which will enable Westinghouse to evaluating baffle-former and barrel-former bolting patterns for Faulted conditions.

- (b) Further, this information has substantial commercial value as follows:
- (i) Westinghouse plans to sell the use of similar information to its customers for the purpose of evaluating baffle-former and barrel-former bolting patterns for Faulted conditions.
 - (ii) Westinghouse can sell support and defense of industry guidelines and acceptance criteria for plant-specific applications.
 - (iii) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar technical evaluation justifications and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith CAW-18-4830 is the proprietary version of a document, furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the Affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

COPYRIGHT NOTICE

The reports transmitted herewith CAW-18-4830 each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.390 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document room in Washington, DC and in local public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.